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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,627	07/16/2001	Ullas Gargi	10006286-1	2970

7590 01/28/2004

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EXAMINER

WANG, JIN CHENG

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,627

Applicant(s)

GARGI ET AL.

Examiner

Jin-Cheng Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: _____

DETAILED ACTION

Response to Request for Reconsideration

This Office Action is in response to applicant's request for reconsideration filed on 11/24/2003.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7, 11-12, 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirata et al. U.S. Patent No. 6,240,423 (hereinafter Hirata).

3. Claim 1:

Hirata teaches a method of visualizing and retrieving a data file comprising:

Displaying a plurality of images representing corresponding data files on a display device using a first distance metric (images being retrieved in order based upon the distance between the query image and the result candidate images, column 6) *between each data file* (e.g., figures 1-11; column 6-9);

Redisplaying a portion of the images on the display device using a refined distance metric (e.g., figure 9, 11 and 12; column 6-9); and

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Performing at least one of retrieving, marking, and selecting at least one desired data file (Hirata teaches retrieving at least one desired data file; see figures 1-11; column 6-9).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of repeating the redisplaying step until a desired data file is identifiable. However, Hirata further discloses the claimed limitation of repeating the redisplaying step until a desired data file is identifiable (e.g., column 4 wherein Hirata teaches specifying a hierarchical structure using the authoring tools in which a user may repeat the step of specifying regions of the query image until a desired data file is identifiable).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of computing a feature vector for each data file and calculating the first distance metric between each data file using a first subset of data contained in the feature vector. However, Hirata further discloses the claimed limitation of computing a feature vector for each data file (e.g., similarity is determined based on a number of features derived from the respective images; column 1) and calculating the first distance metric between each data file using a first subset of data contained in the feature vector (e.g., column 6-9).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 3 except additional claimed limitation of calculating a second distance metric between each data file using a second subset of data contained in the feature vector which is greater than the first subset. However,

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Hirata further discloses the claimed limitation of calculating a second distance metric between each data file using a second subset of data contained in the feature vector which is greater than the first subset (e.g., column 6-9).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 4 except additional claimed limitation of computing the feature vector for each data file before starting the method; storing the feature vector for each data file; and accessing the feature vector for each data file. However, Hirata further discloses the claimed limitation of computing the feature vector for each data file before starting the method; storing the feature vector for each data file; and accessing the feature vector for each data file (e.g., grouping the second set of similar images into clusters based upon a similarity calculation among members of the second set of similar images and re-ordering the second set of similar images based upon a similarity calculation among members of the second set of similar images wherein feature vector calculation is involved for each data file and the results are stored in the database; see column 9).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 4 except additional claimed limitation of each feature vector having a length at least eight. However, Hirata further discloses the claimed limitation of each feature vector having a length at least eight (e.g., considering the multiple features with respect to the image regions).

Claim 7:

The claim 7 encompasses the same scope of invention as that of claim 4 except additional claimed limitation of the feature vector including at least one of a color feature and a texture

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feature. However, Hirata further discloses the claimed limitation of the feature vector including at least one of a color feature and a texture feature (e.g., figures 1-11; column 2).

Claim 11:

The claim 11 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of the data files being image files. However, Hirata further discloses the claimed limitation of the data files being image files (e.g., figures 1-11; column 5).

Claim 12:

The claim 12 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of the data files being video files. However, Hirata further discloses the claimed limitation of the data files being video files (e.g., figures 1-11; column 5).

Claim 16:

The claim 16 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of the portion of the images redisplayed being graphically selected by the user. However, Hirata further discloses the claimed limitation of the portion of the images redisplayed being graphically selected by the user (e.g., figures 1-11; column 4).

4. Claim 17:

Hirata teaches a method of interactively retrieving a data file from a set of data files in real time comprising:

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Displaying a plurality of images, each image corresponding to a data file, on a display device using a first distance metric between each data file (e.g., clustering image data files using a distance metric; figures 1-11; column 6-9);

Interactively selecting, by a user, a portion of the images (e.g., a user specify the regions of the images; e.g., the region division of figure 3; figures 1-11; column 6-9);

Redisplaying the portion of the images in real time on the display device using a refined distance metric (e.g., re-order based on the similarity among the candidate images of figure 9 or 2nd stage image matching based on boundary of figure 11 and grouping and re-ordering based on the similarity among candidates using distance metric of figure 11; figures 1-11; column 4); and

Retrieving a desired data file (retrieved data file is displayed on a display device; figures 1-11; column 4).

Claim 18:

The claim 18 encompasses the same scope of invention as that of claim 17 except additional claimed limitation of computing a feature vector for each data file and calculating the first distance metric between each data file using a first subset of data contained in the feature vector. However, Hirata further discloses the claimed limitation of computing a feature vector (visual attributes values, including color, shape and texture-related values; see column 2) for each data file and calculating the first distance metric between each data file using a first subset of data contained in the feature vector (a subset of data refers to the image region and Hirata teaches extracting the feature vector corresponding to each image region in the feature-based image processing; figures 1-11; column 6-9).

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Claim 19:

The claim 19 encompasses the same scope of invention as that of claim 18 except additional claimed limitation of calculating a second distance metric between each data file using a second subset of data contained in the feature vector which is greater than the first subset. However, Hirata further discloses the claimed limitation of calculating a second distance metric between each data file using a second subset of data contained in the feature vector which is greater than the first subset (e.g., re-ordering the output images using a second distance metric; figures 1-11; column 6-9).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata et al. U.S. Patent No. 6,240,423 (hereinafter Hirata), as applied to claims 1 and 17 above, and further in view of Moghaddam et al. U.S. Patent No. 6,584,221 (hereinafter Moghaddam).

7. Claim 8:

(1) The claim 8 encompasses the same scope of invention as that of claim 4 except additional claimed limitation of the feature vector including at least one of a color histogram, color moment, color coherence histogram, Multiresolution Simultaneous Autoregressive (MRSAR) Model, coarseness, and directionality.

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(2) Hirata is silent on the claimed limitation of the feature vector including at least one of a color histogram, color moment, color coherence histogram, Multiresolution Simultaneous Augoregressive (MRSAR) Model, coarseness, and directionality.

(3) Moghaddam discloses the claimed limitation of the feature vector including at least one of a color histogram, color moment, color coherence histogram, Multiresolution Simultaneous Augoregressive (MRSAR) Model, coarseness, and directionality (e.g., Moghaddam column 3, lines 2-10; column 3, lines 64-67; column 4, lines 1-8).

(4) It would have been obvious to one of ordinary skill in the art to have incorporated the Moghaddam's feature vectors into Hirata's method of visualizing and retrieving an image from the database because Hirata suggests visual and semantic features including color, shape and texture-related values (Hirata column 2).

(5) One having the ordinary skill in the art would have been motivated to do this because it would have advantageously provided the various image features for accurate image extraction and matching.

Claims 13-14:

(1) The claim 13 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of establishing a fixed scale that spans a maximum distance between the plurality of data files; and indicating a relative position on the fixed scale for the redisplay of the portion of the image, thereby providing the user with a reference frame.

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The claim 14 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of the fixed scale being at least one of a linear scale, a logarithmic scale, and a hyperbolic scale.

(2) Hirata is silent on the linear scale.

(3) Moghaddam discloses the linear scale (e.g., Moghaddam column 4).

(4) It would have been obvious to one of ordinary skill in the art to have incorporated the Moghaddam's linear scale into Hirata's method of visualizing and retrieving an image from the database because Hirata suggests specifying image regions (Hirata column 2).

(5) One having the ordinary skill in the art would have been motivated to do this because it would have advantageously selected image regions at different resolutions.

8. Claim 9, 10, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata et al. U.S. Patent No. 6,240,423 (hereinafter Hirata), as applied to claims 1 and 17 above, and further in view of Jain U.S. Patent No. 6,121,969 (hereinafter Jain).

9. Claims 9, 10, and 20:

(1) Hirata teaches a method of visualizing and retrieving a data file from a set of data files.

(2) Hirata is silent on the claimed limitation that the first distance metrics are mapped into an N-dimensional space using FastMap for displaying and the refined distance metrics are mapped into an N-dimensional space using FastMap for redisplaying.

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(3) Jain discloses the claimed limitation that the first distance metrics are mapped into an N-dimensional space using FastMap for displaying and the refined distance metrics are mapped into an N-dimensional space using FastMap for redisplaying (e.g., Jain column 27, lines 30-40; column 25, lines 35-67; column 26, lines 1-57).

(4) It would have been obvious to one of ordinary skill in the art to have incorporated the Jain's mapping method into Hirata's method of visualizing and retrieving an image from the database because Hirata suggests distance metric for image features with respect to image regions (Hirata column 4-5).

(5) One having the ordinary skill in the art would have been motivated to do this because it would have advantageously provided the display of metric properties for representation in the display space (Jain column 25, lines 35-67; column 26, lines 1-57).

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata et al. U.S. Patent No. 6,240,423 (hereinafter Hirata) as applied to claims 1 and 17 above, and further in view of Bates et al. U.S. Patent No. 5,528,259 (hereinafter Bates).

11. Claim 15:

(1) Hirata teaches a method of visualizing and retrieving a data file from a set of data files.

(2) Hirata is silent on the claimed limitation of providing a display depth indication that represents an amount of overlapping of images on the display and scrolling to view images that were previously not viewable due to overlapping of the images.

(3) Bates discloses the claimed limitation of providing a display depth indication that represents an amount of overlapping of images on the display and scrolling to view images that were previously not viewable due to overlapping of the images (e.g., Bates figures 4A-4C; column 4, lines 39-56; column 5, lines 25-45).

(4) It would have been obvious to one of ordinary skill in the art to have incorporated the Bates' scrolling of overlapping images and selecting of an alternate layer into Hirata's method of visualizing and retrieving an image from the database because Hirata suggests a user interface selection of a portion of image and second level regions and objects (Hirata figures 1-11; column 4).

(5) One having the ordinary skill in the art would have been motivated to do this because it would have advantageously provided a pictorial representation of one of selected multiple layers of image data in a multi-dimensional scrolling method of manipulating or selecting image layers (e.g., Bates figures 4A-4C; column 4, lines 39-56; column 5, lines 25-45).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6606 for regular communications and (703) 308-6606 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 395-3900.

jcw
January 14, 2004



MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600